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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,982	05/30/2001	Yoshio Yanase	2001-0615A	6344

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WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER

NGUYEN, SANG H

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 10/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/856,982

Applicant(s)

YANASE ET AL.

Examiner

Sang H Nguyen

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 6,9,13 and 16-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2877

## DETAILED ACTION

### *Response to Pre-Amendment*

1. The present Office action is made in response to the Pre-Amendment as Paper No. A filed on 05/30/02. It is note that the present application contains claims 1-20.

### *Priority*

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Information Disclosure Statement*

3. This office acknowledges of the following items from the Applicant: Information Disclosure Statement (IDS) file on 05/30/02 is received and made of record as Paper # 4. The references cited on the PTOL 1449 form have been considered.

### *Drawings*

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **“a laser beam”** in claims 1-2; the **“a scattered light or reflected light”** in claims 1-2; the **“multiple light optics”** in claims 1-2; the **“different detecting angles to an incident light”** in claims 1-2; the **“a horizontal length”** in

Art Unit: 2877

claim 2; the **"a vertical height"** in claim 2; the **"a laser surface inspection apparatus"** in claims 3 and 10; the **"a high angle light optic is A"** in claims 5-6, 8-9, 12-13, 15-18 and 20; and the **"a low angle light optic is B"** in claims 5-6, 8-9, 12-13, 15-18 and 20 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-2, 5-6, 8-9, 12-13, 15-18, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1 recites the limitation "the defect" in line 4 There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 1 recites the limitation "the ratio of the detected light intensities" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 2 recites the limitation "the ratio of the detected light intensities" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 2877

Regarding claims 2, 5-6, 8-9, 12-13, 15-18, and 19, the phrase "the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding claims 1-2, 5, 8, 12, 15, and 20; the term "or" is alternative.

Regarding claim 2; the phrase "calculating a difference between a horizontal length and a vertical height or between a horizontal length and a horizontal length crossing at right angles of a light point defect" is not clear. What does applicant mean "between a horizontal length and a vertical height" and "between a horizontal length and a horizontal length"?

Regarding claims 5-6, 8-9, 12-13, 15-18, and 20; the phrase "the forms and types of defects and the like" is not clear and vague. What does applicant mean "the forms and types of defects and the like"?

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5, 7-8, 10-12, 14-15, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Fossey et al (U.S. Patent No. 6,292,259).

Art Unit: 2877

Regarding claims 1-2, 4, 7, 11, 14, and 19; Fossey et al discloses a method for inspecting a semiconductor wafer surface (W of figure 3), comprising the step of:

- \* scanning a wafer (W of figure 3) with a laser beam (figure 3) from an inspection system (20 of figure 1) having a laser inspection (81 of figure 3);

- \* detecting a scattered light or reflected light (figures 3 and 6) from the wafer surface (W of figure 3) by multiple light optics (121,122, 123,124, 125, 126 of figure 3), wherein the multiple light optics (121,122, 123,124, 125, 126 of figure 3) having different detecting angles (a,b,c of figure 3) to an incident light (figures 3 and 6 and col.7 line 6 to col.8 line 24); and

- \* classifying and determining defects on the wafer surface by a system controller (50 of figure 1) operates the inspection system (20 of figure 1) based on the ratio of the detected light intensities from the multiple light optics (col.11 lines 10-67 and col.12 lines 1-7, and claims 7-8 and 30-31). See figures 1-22.

Regarding claims 3 and 10; Fossey et al discloses a laser surface inspection apparatus considered to be the inspection system (20 of figure 1) having at least two light optics (121,122, 123,124 of figure 3).

Regarding claims 5, 12, 15, and 20; Fossey et al discloses types of defects as particles or other debris and pits or "COPS" (col.1 lines 20-37) are determined depending on a combination of A, B, and a value given by A/B, wherein the light intensity of particle conversion size of a light point defect detected in a high angle optical is defined A, while the light intensity of particle

Art Unit: 2877

conversion size of a light point defect detected in a low angle light optic is defined B (col.7 lines 25-57). See figures 3 and 6-7.

***Allowable Subject Matter***

9. Claims 6, 9, 13, and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 6, 9, 13, and 16-18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Isozaki (6,115,117) discloses method and apparatus for surface inspection; and Yamazaki et al (4,902,131) discloses surface inspection method and apparatus therefor. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Sang Nguyen whose telephone number (703)308-6426. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm.

Art Unit: 2877

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Frank Font, can be reached on (703)308-4881. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

cn

Nguyen/ sn

August 15, 2002

  
Frank G. Font  
Supervisory Patent Examiner  
Art Unit 2877  
Technology Center 2800